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Intel in Embedded. Roadmap to your future.

Intel embedded
processors,
flash memory,
solutions
and support.



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**Roadmap to
Your Future.**
Intel has a strong
commitment to
embedded
developers.



Intel is expanding its commitment to embedded developers with a range of leading-edge processors, flash memory, building blocks, tools and technologies that can help you meet stringent platform requirements and competitive development schedules.

Wherever your embedded designs take you, from industrial control and automation to handheld transaction terminals or innovative medical imaging devices, Intel provides embedded product roadmaps that can help you deliver innovative solutions while overcoming development challenges.

You can rely on Intel for high performance, low power operation, wired and wireless network connectivity and integrated graphics capabilities in highly reliable, extended lifecycle building blocks.

**When it comes to embedded solutions,
the roadmap to your future starts here.**

Embedded Opportunities
Intel delivers a roadmap
to your future success.

Intel building blocks play a key role in today's dynamic embedded market segments.

Industrial control and automation

The factory floor is becoming an increasingly Internet-connected and networked environment within the connected enterprise. Intel offers top-to-bottom, standards-based silicon building blocks for industrial control and automation in today's digital factory, with applications ranging from design, plant and process engineering to planning and scheduling, remote monitoring, operations and maintenance.

Interactive clients

Interactive clients are the end-nodes or access points of the enterprise networks, where transactions occur between a business and its customers. Intel provides building blocks for solutions ranging from Point of Sale terminals, Kiosks, bank ATM machines and handheld transaction terminals.



“We offer a highly innovative product portfolio based on Intel® architecture that is scalable and provides stability with long-term availability, all important for industrial automation solutions.”

Matthias Hofmann,
Head of Marketing
Industrial PC Division
Siemens A&D

Medical equipment

Deploying reliable, scalable, open standards-based platforms based on Intel embedded building blocks enables healthcare organizations worldwide to streamline workflow and operational efficiencies, improve patient care and safety, and increase access to critical data.

Emerging market segments

Intel embedded building blocks are ideally suited for emerging display centric embedded products, ranging from telematics (in-car information and entertainment systems) and portable navigation devices to video phones, radio frequency identification (RFID) terminals, military applications and image-processing solutions.

Unique Challenges
Intel understands embedded requirements.

The challenge for developers of embedded solutions is how to support more functionality, higher application performance, faster network throughput and innovative software solutions in less space, while drawing less power, at lower cost, with smaller development teams – in less time than ever before.

Intel understands the demands you face.

Intel provides building blocks, platforms and technical support designed to help you meet your product development and business goals. In addition, Intel and its extensive ecosystem of third-party vendors, including members of the Intel® Communications Alliance, can help you find the right tools, development platforms and software to help you meet your specific application requirements.

From extended lifecycle support, to quick time-to-market platform solutions and technical assistance, Intel provides the roadmap to your future.



**“Fujitsu’s
retail solutions with
Intel® technology deliver
performance and headroom
for future growth, enabling
us to accelerate return
on investment for
our retail customers.”**

Cathy Boss-Fessel,
Director,
Marketing Programs
Fujitsu

Intel® Flash Memory
The right products for your embedded applications.

Intel offers a broad portfolio of flash memory solutions designed to meet the diverse needs of embedded system designers. Based on industry-leading technology and Intel’s high-volume supply network, Intel flash memory delivers excellent performance and value.

Flash memory solutions are offered with a wide range of densities, packaging options, high-performance access times, multiple security modes and low-power options. In addition, Intel offers a wide variety of software products, each designed to meet specific system application needs. Intel Flash memory software helps reduce reliance on volatile memory options, helps eliminate redundant memory components and enables you to take advantage of remaining storage for data beyond the O/S.

Intel® Network Processors

Flexible IP networking for today's embedded systems.

Intel® network processors based on Intel XScale® technology are ideal for network devices and power-limited, space-constrained embedded solutions that require high-performance packet-handling with support for multiple standard network protocols.

Intel's network processor product line delivers excellent performance per Watt and excellent network throughput in highly integrated single-chip designs. Developers can select Intel network processors with integrated networking support, PCI and Ethernet integration options and integrated security.

Intel network processors are supported by standardized ARM* development tools.

Intel® Architecture Processors

Maximize performance with flexible embedded platforms.

Intel® architecture processors and chipsets deliver enhanced performance, lower power, for compute and graphics-intensive embedded systems. In addition to robust application processing, Intel architecture-based embedded building blocks include Intel's thirdgeneration integrated graphics technology for display-centric applications.

To meet the requirements of today's increasingly networked environments, Intel processors and chipsets provide high-bandwidth I/O interfaces including PCI Express* graphics, Serial ATA and Gigabit Ethernet while maintaining support for legacy I/O technologies.

Four product lines of Intel® embedded processors

Intel is growing its commitment to embedded market segments with four product lines of embedded processors based on Intel® architecture and Intel XScale® technology.

Based on years of large-scale technology investment and backed by Intel's manufacturing capacity and quality assurance leadership, each of Intel's embedded processor product lines provides a range of reliable building blocks, development tools and software.

Intel® I/O Processors

Intelligent solutions optimized for data handling performance.

Intel® I/O processors based on Intel XScale® technology lead the embedded Intel XScale product roadmap in performance. With high core speeds and high-bandwidth integrated interfaces, including PCI-X and PCI Express*, these highly integrated processors are designed for applications that require fast data handling within a reduced thermal envelope.

Intel I/O processors use optimized dual-core ported memory for enhanced bandwidth and include industry-standard interfaces and peripheral buses that provide the flexibility to work with ASICs and FPGAs in embedded designs.

Intel I/O processors are ARM* compliant and supported by the substantial ecosystem of standardized ARM* development tools.

Intel® PXA2XX Processor Family for Embedded Computing

Highly integrated, low-power designs for a new generation of embedded products.

The Intel® PXA2XX processor family based on Intel XScale technology, including the Intel® PXA270 processor for embedded computing and the Intel® PXA255 processor, deliver a combination of high performance (up to 624 MHz), lower power and integration in compact packaging configurations that make them ideal for next-generation embedded products.

These highly integrated low-power processors support 802.11 and Bluetooth wireless networking and include an integrated Liquid Crystal Display (LCD) controller and security module. They are supported by standardized ARM* development tools.

Intel® Communications Alliance
Modular, standards-based
solutions based on Intel®
technologies.

The Intel® Communications Alliance is a community of communications and embedded developers and solutions vendors that provide customers with a trusted supply line of products and services based on the latest Intel processors and platforms.

Alliance members provide you with a choice of solutions at multiple levels of integration, backed by technical information and support from design through manufacturing. Application software, drivers, development tools and support make Intel Communications Alliance members your logical first step to identify board-level and higher-level building blocks that can help you minimize time-to-market.

**“The Sensormatic®
RFID readers include
the Intel XScale®
processor, which brings
intelligence to the reader and
increases its functionality
and upgradeability.”**

George Reynolds,
VP of RFID
Tyco Fire & Security



Software and Support
Helping you overcome
development challenges.

Intel® Software Development products include essential device drivers and software components designed to speed product integration. Look to Intel and a robust embedded ecosystem, including members of the Intel Communications Alliance, for software components, tools and services that optimize application performance while providing compatibility with leading development environments.

Intel’s technical support infrastructure for embedded developers includes comprehensive tool chains, extensive technical documentation and a large third-party development ecosystem providing tools, components and technical expertise. Qualified customers will have available live technical assistance and email support from Intel distributors or directly from Intel technical support services.

The Intel® Managed Design Win program provides an Intel technical expert assigned to work with qualifying customers. The Intel representative is available to answer questions and review schematics until the customer achieves a working design.

Development Platforms


Board-level solutions accelerate embedded development.

Intel building blocks are designed to work together in configurations designed to meet the specialized requirements of today's leading embedded application segments.

Development platforms based on Intel embedded building blocks are ready to use off-the-shelf to speed development, and can be flexibly configured to support value-added features and functionality. Embedded development platform solutions from Intel and members of the Intel Communications Alliance include documentation, block diagrams, reference design schematics and supporting software and development tools.

Intel's platform-based design approach delivers important benefits for embedded developers:

- Flexible, scalable platform configurations
- Shortened platform configuration and design cycles
- Accelerated product hardware validation
- Reusable hardware and software building blocks
- Rapid implementation of leading-edge technologies
- Extended lifecycle support
- Leading embedded and real-time operating systems and software development environments



"Intel® embedded platforms provide the performance, graphic and networking capabilities which enable Wincor to provide state of the art POS, Kiosk, and ATM solutions at a lower total cost of ownership."

Jeff Soisson,
President
Wincor Nixdorf US

Standards-Based Solutions

Intel supports embedded industry standards.

Embedded applications impose specific sets of requirements, and this has led to the industry-wide adoption of unique embedded form factors. Intel supports modular designs for standardized form factors including ATX, PC-104, EBX, VME, CompactPCI, AdvancedTCA*, AMC, FlexATX, EmbeddedATX, and MicroATX.

To help the industry transition from parallel to serial interfaces in embedded small form factor board solutions, Intel works with key industry leaders to introduce new standard form factors designed to intercept technology transitions, including serial bus standards including PCI-Express.

Kontron, PFU Systems, RadiSys and Intel are working together to help the industry meet the challenges of embedded computing small form factors by sponsoring a new industry standard known as COM Express (Computer on Module Express). This new industry standard, developed under the aegis of the PICMG consortium, enables very high I/O and compute densities in embedded designs.

Intel Dependability
The roadmap to your future begins here.

Intel's long-term embedded roadmap includes multiple product lines that provide the performance, low-power, I/O bandwidth, dependability and connectivity required to meet your demanding development challenges.

Visit us online now to learn more about Intel embedded processor product lines, chipsets, flash memory and network devices.



Your embedded future begins here.
www.intel.com/go/embedded

To discuss your special requirements, contact your Intel field sales representative.

Intel® Embedded Products At-a-Glance

	Intel® Architecture Processors	Intel® Network Processors	Intel® PXA2XX Processors	Intel® I/O Processors	Intel® Flash Memory
Requirements	Application performance and headroom	Power and space constrained devices	Compact handheld form factors	Power and space constrained devices	Design simplicity
	Software support	Fast packet handling	Extended battery life	High speed data transport	Extended product lifecycles
	I/O bandwidth	Multiple functionality	Multiple functionality		Multiple form factors
		Performance/Watt	Wireless networking		Low cost
Benefits	Broad range of price points and performance options	Integrated connectivity and networking	High performance/Watt	High data throughput	Easy drop-in compatible density
	Widely used software code base	Integrated security	Low power/extended battery life	High performance/Watt	upgrades
	Standard IA development tools	Fast packet handling	Wireless networking support	Flexible and upgradeable	Proven reliability
	Large third-party developer ecosystem	High performance/Watt	Integrated LCD display controller	Standard ARM development tools	High performance at great value
Operating Systems		Standard ARM development tools	Standard ARM development tools		Stable supply
	Windows* XP Embedded	Windows CE	Windows CE	Windows CE	Windows CE
	Windows* XP, 2000	Linux	Linux	Linux	Linux
	Windows* CE	Real-time operating systems	Real-time operating systems	Real-time operating systems	Real-time operating systems
	Linux				
	Real-time operating systems				